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ABSTRACT

This document reports on the results of instructional audits of five classes. The audit is a systematic approach to gathering data on what is taught and learned in classrooms. Data are content analyzed to determine the relationship between such factors as what a teacher intended to teach, what was actually taught, what students perceived they were taught, and what the teacher perceived students learned. The audit commences with a teacher briefing during which the auditor records what is intended to be taught over the course of the upcoming observation period. This permits the auditor to compare this information with what teachers actually teach and the extent to which they may fail to achieve their expectations. Students are interviewed at the end of the observation period, and data is collected on their perceptions. Differences between the teacher's perception of what was meant to be learned and what students appeared to have actually learned are evaluated. At the conclusion of this experiment it was felt that the audit can serve as a valuable component of a personalized professional development program for both preservice and inservice teachers. The primary strength of the audit lies in its subject matter focus, concern with course improvement rather than teacher evaluation, provision for student input, and systematic approach to the assessment of teaching. (JD)

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Personalizing Professional Development:

An Overview of Five Instructional Audits

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Personalizing Professional Development: An Overview of Five Instructional Audits

The instructional audit is a systematic approach to gathering data on what is taught and learned in classrooms. Data from an audit can be used for a variety of purposes, including 1) course improvement, 2) basic curriculum research, and 3) the determination of teacher effectiveness. In addition, data can be employed in several contexts; i.e., 1) collegial evaluation, 2) preservice education, and 3) inservice education or professional development. The five studies reviewed in this paper all were designed to provide information relevant to course improvement.[1] The three studies supervised by Lauri Wagner involved preservice interns in the Hoover-Stanford Teacher Corps Project. The two studies supervised by Irene Muzio involved experienced teachers in non-project schools.[2] In this paper we shall address the potential usefulness of the instructional audit in both preservice and inservice programs.

Details concerning the audit and its rationale have been provided elsewhere.[3] The approach encompasses as many as five separate phases of data collection and analysis. The data are gathered from teachers, students, and non-participant observers (auditors) and are based on a series of related questions that constitute the audit's paradigm. Once collected, data are content analyzed to determine the relationship between such factors as what a teacher intended to teach, what was actually taught, what students perceived they were taught, and what the teacher perceived students learned.

Since the five audits were conducted with different teachers, in different subject matter areas, using different students, we shall avoid generalizing among the studies. Occasionally comparisons between the findings of particular audits will be made, however, to suggest possibilities for further investigation. To facilitate the following discussion, each audit will be referred to by number.

Audit Number	Description of Audit Context
Audit I	Preservice. Language arts intern. Herbert Hoover Junior High School, San Jose, Calif. Class size - 25 eighth grade students. Unit focus - short stories. Dates: October 10 - October 24, 1976 (10 days).
Audit II	Preservice. Foreign language intern. Herbert Hoover Junior High School, San Jose, Calif. Class size - 11 eighth grade students. Unit focus - introduction to French language. Dates: January 31 - February 15, 1977 (10 days).
Audit III	Preservice. Mathematics intern. Herbert Hoover Junior High School, San Jose, Calif. Class size - 28 eighth grade students. Unit focus - fractions. Dates: April 11 - April 14, 1977 (5 days).
Audit IV	Inservice. Home Economics teacher. Half Moon Bay High School, Half Moon Bay, Calif. Class size - 13 high school students. Unit focus - introduction to kitchen and foods. Dates: September 8 - September 21, 1976 (8 days).
Audit V	Inservice. Science teacher. St. Mathews School (private), San Mateo, Calif. Class size - 11 eighth grade students. Unit focus - ecosystems. Dates: January 18 - February 2, 1977 (9 days).

Because of limited space and incomplete data analysis, only a portion of the collected data from each audit will be discussed. For example, nothing will be said about the accuracy, intensiveness, comprehensiveness, or organization of lesson content. A forthcoming report of all of our audit studies

will include these findings and others. This paper concentrates on what was taught during the audits, what students perceived they learned, and indicators of teacher effectiveness. The conclusion explores the audit's value for course improvement and professional development purposes.

Teacher Intentions Versus What Teachers Actually Teach

Every audit commences with a teacher briefing during which the auditor records what is intended to be taught over the course of the upcoming observation period. The degree to which intentions were specified varied greatly among the five teachers. One outlined each day's activities and objectives in detail, while another gave only a vague overview of the general topics to be covered. While we are still uncertain about the points at which teachers become guilty of under- or over-planning, we concluded that intended learning outcomes should be specific in order to maximize teaching effectiveness.

Gathering data on what teachers intend to teach permits the auditor to compare this information with what teachers actually teach. Such a comparison allows the teachers to see how closely they adhere to their plans (Are they spontaneously altering course content? Have they neglected to cover learning items they had planned to cover?) and to gain a sense of how much material they introduce over the course of a curriculum unit. Teachers may be aware of how many pages in a text they have covered, but do they realize the number and range of individual learning items they have taught?

We discovered that the five teachers differed markedly in the amount and type of content covered in class. Teachers ranged from a mean of 3.6 to a mean of 25.9 learning items per period of instruction. Learning items were

separated into facts, concepts, rules, explanations, feelings or attitudes, and skills. In all but one class, factual content predominated. Audit III (general mathematics), however, revealed a preponderance of skill-based content, while Audit I (language arts) included a large minority of concepts. The home economics unit (Audit IV) covered a number of rules. Explanations rarely served as learning items during any of the audits, and feelings or attitudes appeared only once, during Audit II (foreign language).

When we investigated how teacher intentions compared to what teachers actually taught, we once again discovered considerable variation. For example, in Audit I the teacher pre-identified only 18% of the learning items he eventually taught. In Audit V, on the other hand, 100% of the learning items that were actually taught during the unit were mentioned in the initial briefing.

Table 1

Teacher Intentions Versus Actual Teaching

Audit Number	Number of Learning Items Covered During Audited Classes	Number of These Learning Items Mentioned During Initial Teacher Briefing	Percentage of "Taught" Items Cited in Briefing
I	54	7	13%
II	116	42	36%
III	23	13	57%
IV	207	192	93%
V	32	32	100%

While our caveat against inter-audit comparisons still holds, it is interesting to note that the two experienced teachers (Audits IV and V) pre-identified a much larger number of learning items than the teacher interns.

A second question related to the issue of teacher intentions concerns the extent to which teachers fail to teach what they plan to teach. In general, all five teachers presented material in class covering each of the learning items they mentioned in their initial briefings. In the few instances when intended learning items were not taught, the teachers usually had a ready explanation. On only three occasions were actual oversights (instances in which a teacher forgot to teach what was planned) noted. Thus, while the teachers did not specify in advance everything they actually taught, almost everything they did pre-identify was covered eventually in class.

We detected one area in which our teachers seemed somewhat misdirected. All five at various points during instruction acted as if their students should have already acquired or should be in the process of acquiring study skills. These study skills expectations included note-taking, contract completion, reading comprehension, listening, problem-solving, concentration, cooperation with peers, and organization of material. During the post-audit student debriefings, it became apparent that students often lacked these skills or they failed to realize that the teacher expected them to be proficient in anything except subject matter. For their part, the teachers neglected to include study skills among their lists of intended learning items. We concluded that any study skills judged to be necessary to complete course objectives should be built into a teacher's initial set of intentions. Teachers should not take for granted that study skills will be learned by osmosis or as a natural part of regular content learning.

In addition to the above suggestion, we developed several other recommendations during the course of the five audits:

1. Before beginning a new curriculum unit, teachers should ask themselves what they intend to teach and what portion of what they intend to teach do they expect students to learn.
2. Teachers should make a checklist of the learning items they intend students to learn. After each class, they should note which items were covered in class.
3. Provision should be made to vary the type of learning item (examples include facts, concepts, rules, explanations, feelings/attitudes, and skills).

What Do Students Learn?

The audit relies on three sources of data on student learning — the results of teacher-made tests, post-audit teacher judgments of student learning, and student perceptions of what they have learned. The last source of data is, in many ways, the most interesting. Rarely do educators take the time to ask students what they have learned over a given period of time. Instead, tests are developed supposedly to accomplish the task more efficiently. Unfortunately, tests usually do not detect what students freely recall as important about a given learning experience.

Tests typically encompass a fraction of the learning items actually covered in class over a period of time. When we analyzed the teacher-made tests administered at the end of each of the five audits, we found that all but one teacher constructed tests covering less than 60% of the learning items actually taught in class. Using the debriefing technique to find out what students felt they learned permitted us to find out whether students chose to recall the same learning items as teachers had felt compelled to include on their post-audit tests.

When we debriefed students following the audits we discovered that they often were ill-prepared to tell us what they had learned. Some even indicated that it was inappropriate to expect them to know what they had acquired during the previous few weeks. The general discomfort over being asked what they had learned served as sad testimony to the extent to which students depend on teachers and tests to tell them what they know. We pressed students to think about themselves as legitimate judges of their learning and reinforced the notion that their perceptions should be taken seriously. Eventually most students shared their ideas about what they had learned during the audits, what they had known before, and what they felt about the quality of instruction. Teachers generally regarded the debriefing responses as the most valuable data in the entire audit.

A few examples illustrate the kinds of responses that can surface during an open-ended debriefing session. In Audit I a majority of students expressed their dislike of learning contracts and worksheets as a primary mode of instruction. They seemed uncertain whether completing worksheets at their desks actually led to learning. While all of them admitted having read short stories as part of their contracts, few said they had learned anything from the readings. In effect, they were saying that discussing what they read with the teacher and other students was an important part of learning-by-reading. These same students also offered a perceptive comment on the dictation lessons that opened each class period. They commented that the purpose of dictation was not to perfect listening or grammatical skills, but to quiet down the class! The teacher later acknowledged that a prime reason for the dictation was, in fact, to establish an orderly classroom environment in the new open-space facility.

In all but one audit, students generally identified foci of instruction that differed from the subjects their teachers said they had stressed. In many instances the teacher would state that he had emphasized a certain concept or skill, while his students indicated he had underscored a routine behavior like completing assignments on time or listening carefully in class. We concluded that students probably would benefit if teachers specified more precisely that content which they regard as central to their lessons.

One of the debriefing questions requested that students mention anything the teacher covered in class that they had learned previously. In Audit I and Audit IV, most students could point to at least one or two items with which they were already familiar. In general, though, the content covered in each curriculum unit seemed to be new to most students. Teachers still are advised, though, to re-assess periodically their course content to make certain they are not duplicating material covered elsewhere.

In addition to the standard debriefing questions, we asked students if they would prefer an oral or written debriefing to a teacher-made test as a way of evaluating their achievement. While their reasons often differed, a majority said they would prefer debriefing. Some simply felt too anxious during tests. Others felt that debriefing allowed more thorough responses and immediate feedback. While debriefing need not be seen as a substitute for teacher-made tests, it may well represent a useful supplement.

Data from the debriefings was content analyzed in order to answer two audit questions: 1) What do students recall having learned that the teacher did not teach? and 2) What do students fail to recall that the teacher actually taught? In general, students recalled only those learning items that had been

covered in class or on assignments. Any "hidden curriculum" items inadvertantly communicated in class apparently remained hidden to students. The only instances where students said they learned something that had not appeared in the lesson transcripts were those involving classroom management items such as "I learned to get along with Joe" and "I learned to listen better." These instances were too infrequent to confirm the belief that students are conscious of learning a great deal that their teachers did not intend them to learn.

As for the matter of what students failed to recall, we can say with certainty as well as disappointment that most students freely recalled very little of what they had been taught in class. In each audit few students even recalled all the topics that had been covered. Rarely did half the students in any audit recall any particular learning item. Typically students responded with gross generalizations (i.e., "I learned about short stories."). During the elaboration period that followed each debriefing, however, many students were able to specify in somewhat greater detail what they had learned. Their failure to recall much without prompting seems to suggest that they need to learn <u>how</u> to remember content at the same time they learn the content itself. Teachers can assist in this process by showing students how to take advantage of outlines, classification systems, mnemonics, and other retention-facilitating devices.

On the basis of student responses to the debriefing questions, we developed the following list of suggestions for teachers:

1. Students need opportunities to practice answering questions such as the initial debriefing query — "What have you learned during this unit?" Being able to reconstruct previous learning experiences is vital to the development of self-reliant learning.

2. To facilitate student retention, teachers need to instruct students in methods for organizing and recalling information.
3. Periodically teachers should review the content of their courses in light of student feedback to ensure a minimum of subject matter duplication with previous student learning experiences.
4. Debriefing may be regarded as an alternative or supplement to standard evaluation procedures. Debriefing places some of the responsibility for determining student achievement on the students themselves.
5. Teachers should not assume that students understand what is being stressed in class. Clear statements of unit, lesson, and course objectives are desirable.

Indicators of Teacher Effectiveness

The audit provides two ways to assess teacher effectiveness. The first calls for a comparison of teacher judgments of individual student achievement with test results and debriefing responses. The second utilizes aggregate test results and debriefing responses to determine a teacher's most effective mode of instruction.

The first indicator of teacher effectiveness involved debriefing the teacher at the end of the audit period, but prior to the correction of any post-audit test of student achievement. The teacher was asked to comment on what he felt each student had learned. The responses then were ranked according to whether they were relatively high, medium, or low. Next, students were debriefed on what they learned during the audit period. Their responses were ranked on a normative basis, with relatively detailed responses ranked the highest, followed by average and below average responses. Finally, a post-test was administered and the scores divided into thirds (highest, medium,

and lowest).

Comparing the teacher's perceptions of what students had learned with the students' own perceptions and their performance on a teacher-made test provided a rough estimate of how well the teacher knew what learning was occurring in his or her classroom. We obviously believe that the closer a teacher's judgments of student achievement correspond to measures of their actual achievement the better. Teachers who concentrate too much on content and teaching and lose sight of what individual students are (and are not) learning do not fit our criteria for effective teaching.

Table 2 shows the number of discrepancies between teacher judgments and student test performance and debriefing responses. Audit II and III teacher interns had the lowest percentages of discrepancies between their judgments of student achievement and student test results. When teacher judgments were compared to student debriefing responses, however, these two interns registered more discrepancies (though still fewer than Audit I and Audit V teachers). Teacher judgments tended to agree more with debriefing responses than with test results. Perhaps, the same factors that account for the fact that some students provide better debriefing responses also explain why these students are more frequently judged by teachers to be doing well in class (the same presumably holds for the average and below average groups too). Verbal skill probably is one of these factors.

In an effort to stimulate teacher thinking about student achievement, we incorporated into our teacher debriefing several questions concerning the reasons why teachers felt individual students were or were not doing well on their units.

Table 2

Indicators of Teacher Effectiveness

Audit No.	Number of Students	Number and Percentage of Discrepancies between Teacher Judgments of Student Achievement and Student Rank on Post-test	Number and Percentage of Discrepancies between Teacher Judgment of Student Achievement and Student Rank on Debriefing Answers	Number and Percentage of Discrepancies between Student Rank on Post-test and Student Rank on Debriefing Answers
I	25	12 (48%)	14 (56%)	14 (56%)
II	23	5 (22%)	11 (48%)	11 (48%)
III	20	4 (20%)	9 (45%)	8 (40%)
IV	17	8 (47%)	4 (24%)	5 (30%)
V	11	5 (45%)	6 (55%)	6 (55%)

Each teacher exhibited a different style in explaining why students had or had not learned much during the audit period. The teacher intern in Audit III, for example, chose reasons from a very limited reservoir of possible explanations. He saw students either as hard, consistent workers or as inconsistent and inattentive. The teacher in Audit V credited successful students either with innate intelligence or plodding persistence. Her explanations for predicted lack of success were more varied, though. They ranged from dyslexia to failure to cooperate with classmates to test anxiety. Interestingly, the teachers rarely accounted for student success or failure in terms of the quality of instruction. No teacher felt that increased teacher intervention, for instance, might be a reason why a particular student might have done well. Even more surprising was the fact that none of the three teachers who administered pre-tests cited student performance on the pre-test as the basis for predicting subsequent student achievement! Failure to use pre-test data for diagnostic and predictive purposes would appear to be a serious oversight for any teacher seeking to maximize his or her effectiveness.

Overall, the results reported in Table 2 suggest that teacher judgments of student learning often do not correspond to other indicators of student achievement. Teachers may need to think more carefully about the criteria upon which they base their perceptions of student learning as well as the reasons they give to explain why some students do well and others do poorly. Considering the importance of teacher judgments in the lives of students, this recommendation should not be treated lightly.

The second indicator of teacher effectiveness conforms more to conventional notions of what it means to be an effective instructor. Using student achieve-

ment data, we attempted to determine which instructional method had been most successful for each audited teacher. When research on effective teaching methods has been conducted in the past, it generally has compared Teacher X using Method A to Teacher Y using Method B, with some effort to ensure student comparability. Our intention, however, was to compare Teacher X using Method A to Teacher X using Methods B, C, D, etc. in order to discover which method was most effective for a particular teacher.

We divided the teachers into two groups: those who relied almost exclusively on a Primary Mode of Instruction (PMI) and those who utilized Variable Modes of Instruction (VMI). The two PMI teachers employed one mode of instruction so often that we had no basis for comparison. As for the three VMI teachers, we analyzed test items and debriefing responses to determine which learning items were most often identified correctly by students. We employed the following criteria to separate relatively well-learned items from other items: 1) at least 75% of the students identified the item correctly on the post-test (these students did not include any who had identified the item correctly on the pre-test) and/or 2) at least 50% of the students mentioned the item during debriefing. The percentages we selected were arbitrary and may eventually be changed.

Next we determined from the audit transcripts what teaching method(s) had been employed to teach each of the learning items correctly identified by a relatively large percentage of students. This method (or methods) was designated the Optimal Mode of Instruction (OMI), at least as far as the particular unit being audited was concerned. The OMI's for the three VMI teachers were as follows:

> Audit III (Mathematics) - Teacher assists individual students while they complete worksheets at their desks.

Audit IV (Home economics) - Teacher shows film followed by discussion of film's content.

Audit V (General science) - Students read aloud from text, discuss what they have read, and test what they have read in the laboratory.

Expectedly, perhaps, the OMI differed for each VMI teacher. The teacher in Audit V achieved the greatest success using a combination of methods. She was less successful when she employed oral reading or oral reading plus discussion than when she combined these two procedures with lab work. Students in Audit IV appeared to learn best when they viewed a particularly good film on kitchen measurement. The combination of individual worksheets and one-on-one teacher assistance proved the most effective instructional mode for the teacher in Audit III. While generalizations from so small and diverse a sample of teachers are not appropriate, the findings regarding teacher effectiveness seem to imply that teacher educators should spend more time helping teachers discover which teaching methods are personally most successful and less time inculcating "the one best method."

Is the Audit Useful?

Based on our five pilot studies with the instructional audit, we conclude that the techniques can be useful both for preservice education and continuing professional development. Presently, the audit's value derives primarily from its capacity to increase a teacher's awareness of what occurs over a short period of time in his or her class. A study currently in progress, though, seeks to determine whether a teacher actually will change his or her behavior as a result of audit feedback.

The teacher interns associated with the Hoover/Stanford Teacher Corps

Project stated that the audit helped them look at teaching systematically. The audit questions, once internalized, provided a logical framework for thinking about curriculum and instructional planning and course improvement. A detailed account of one intern's reactions to her audit is contained in the following chapter by Lauri Wagner and Shelly Anderson.

The two experienced teachers who were audited felt that the data confirmed their belief that what they were doing in class was sound educational practice. Their units were well-planned, and they handled subject matter accurately and in a comprehensive manner. Student feedback generally was positive. Both veterans appreciated the suggestions concerning ways in which students might be encouraged to retain more of what they learn. They also appreciated the findings indicating that students often perceived unit foci which differed from what they originally intended. Finally, the teachers acknowledged that the reasons they gave to account for student performance in class might need to be re-thought and that students might benefit from debriefing-type experiences.

In summary, we feel that the audit can serve as a valuable component of a personalized professional development program. The audit's primary strengths lie in its subject matter focus, concern with course improvement rather than teacher evaluation, provision for student input, and systematic approach to the assessment of teaching. In addition, sophisticated statistical analyses are not required to make sense out of the data. Further studies should determine whether the audit is practical as a routine element in a collegial evaluation program and as a basis for conducting practical curriculum inquiry.

Notes

1. We wish to express our deep appreciation to the five teachers who consented to participate in the field studies: Shelley Anderson, Cory Bauer, Kenny Jackson, Hector Montenegro, and Irene Muira.
2. The studies conducted by Irene Muzio were supported by a grant from the Proctor and Gamble Foundation.
3. For details about the rationale for the audit, refer to "The Instructional Audit — A Comprehensive Approach to Course Improvement and Curriculum Research" (a presentation given at the Milwaukee Curriculum Theory Conference, November 1976). A version of this presentation is contained in the chapter "Professional Development and Course Improvement Through the Use of the Instructional Audit."